

MAGNETIC LEVEL GAUGE M-SERIES

The M series magnetic level gauge, level switch consists of an un-magnetic chamber, magnetic float and with a built-in magnet strips, a vertical chamber connected a tank with two end. The float rises or falls in the chamber. It turns to the indicative strips to provide a indication of the tank level. This series also provide accessories such as switch and measuring sensor with converter turn to a 4~20mA (2-wires) DC output signal. To provide a liquid level control function.

Technical Data

Application for Chemical and Petrol Chemical process, Boilers and other industries.

Connection: From ½" to 3" flange type, JIS, ANSI, DIN rating available; special size on request

Pressure Limited:

5 kg/cm² for Plastic chamber type (PVC, PP);

7 kg/cm² for Plastic chamber type (PVDF);

20 kg/cm² for Metal chamber type (Stainless Steel);

Up to 50 kg/cm² for Metal chamber type (Stainless Steel) on request

Temperature Limited:

0~50°C for Plastic chamber type (PVC, PP);

-30~100°C for Plastic chamber type (PVDF);

-20~150°C for Metal chamber type (Stainless Steel);

-20~300°C for Metal chamber type (Stainless Steel) on request (for this special type, if your operating temperature is ≥250°C, the Sp.Gr. must be ≥0.8)

Center to Center Length: maximum 5500mm

Accuracy: ±4mm (Transmitter type: standard ±12mm; and ±6mm on request)

Indicating Case Material / Protection Class: SS304 / IP66

Indicating Strips Material: Plastic (PBT); Brass w/painting available;

the colors are Red & White (standard), and other colors option available

Switch Track Material: Aluminum

Indicating Float Material: Aluminum

Specific Gravity: for standard type: 500~2900 kg/m³ (for special type with high temp. ≥250°C, the Sp.Gr. must be ≥800kg/m³)

Indicating Gauge Orientation Adjustable

Chamber Size: ø50 or ø60mm

HART® Communication: Available

Two Wire Transmitter with HART® Protocol:

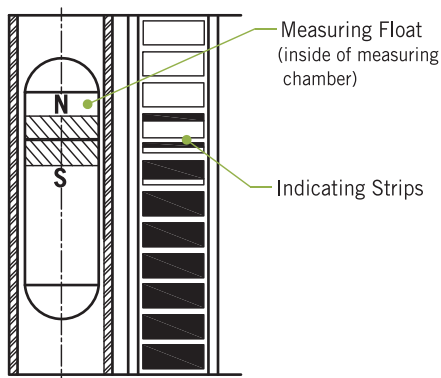


—Galvanic Isolation

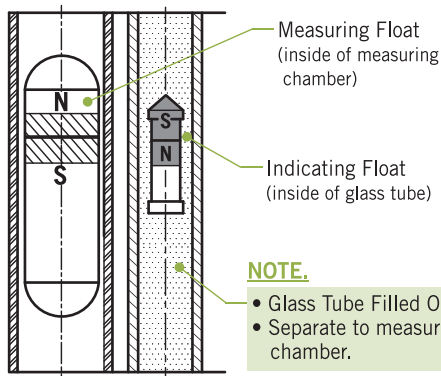
—Suitable for application in SIL 2 installations

Principle

■ Indicating Strips Type ■

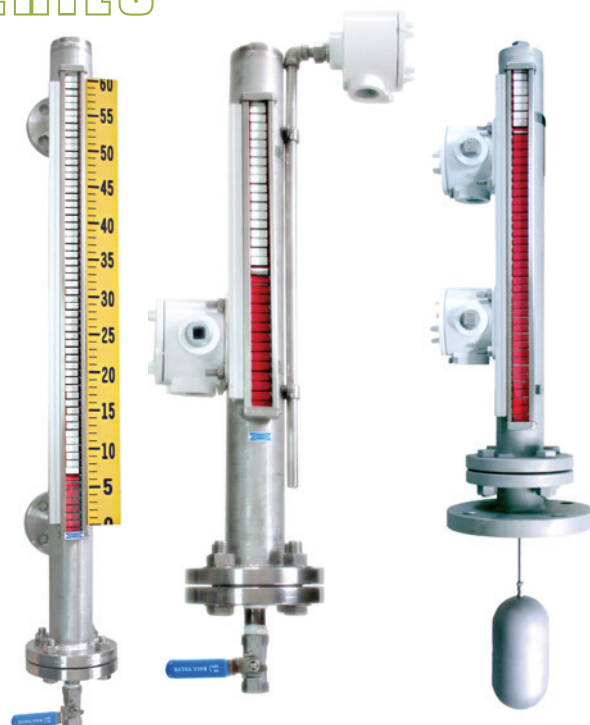


■ Indicating Float Type ■



NOTE.

- Glass Tube Filled Oil.
- Separate to measuring chamber.



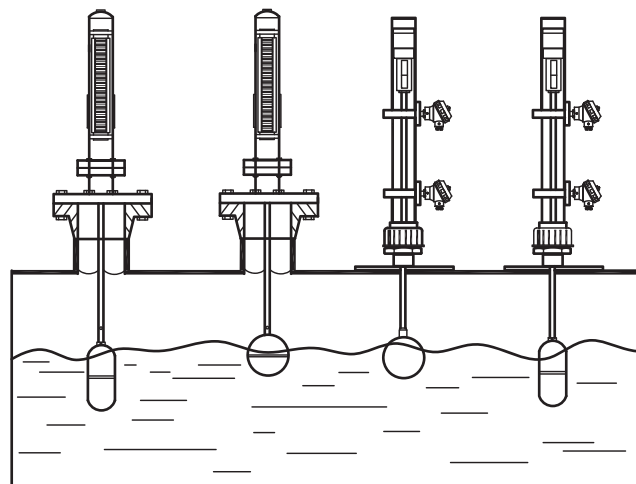
Approvals:



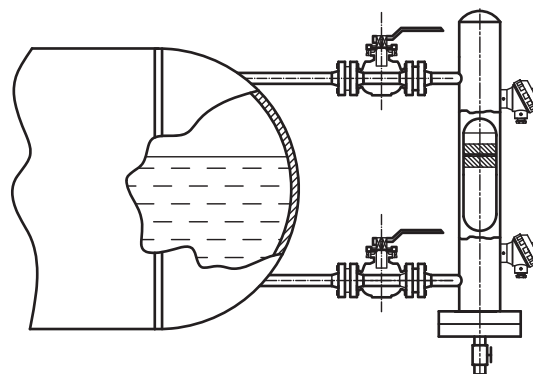
Switches with UL & CSA Recognized and File No. E41515.

Installation

(A) Top Mounting



(B) Side Mounting



Switch Function

Micro Switch Type

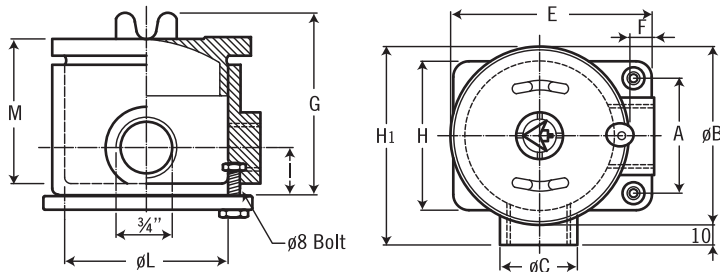
Type: MS-1: Weather Proof Type, IP66

MWS: Explosion Proof Type, (Taiwan Explosion Proof Certification): Ex d IIB + H2 T6 Gb

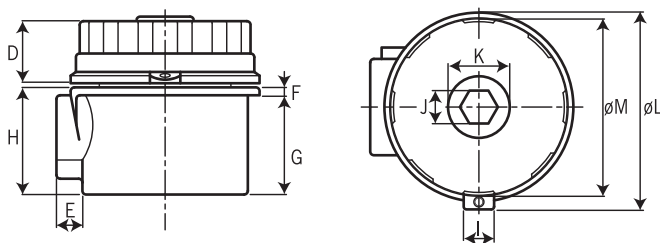
Case Housing Material: Aluminum alloy

Micro Switch: 1 x SPDT ; 2 x SPDT (one setting point) available

Rating: 3A/250VAC, 5A/125VAC, 4A/30VDC



Type	Dimensions										Terminal Block (on request)	
	A	øB	øC	E	F	G	H	H1	I	øL		M
MS-1	68	100	38	110	13	80	92	100	24	88	68	4x4 mm ²



Type	Dimensions										unit:mm
	D	E	F	G	H	I	J	K	øL	øM	
MWS	33	13.8	4.2	52.8	57	13.5	17.5	32.8	102.8	94.5	



MS-1

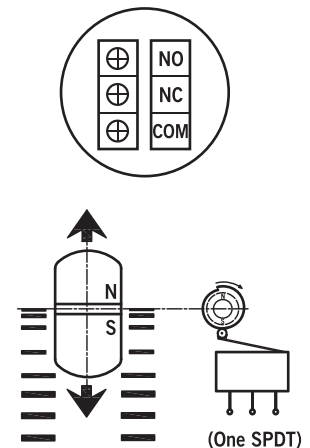


MWS



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Wire Drawing



(Two SPDT)

NC	6
NO	5
COM	4
NC	3
NO	2
COM	1

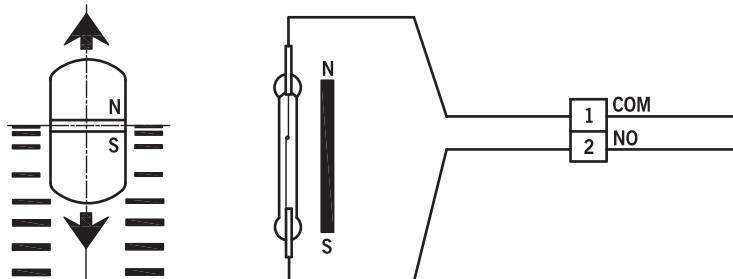
Option: 2 SPDT switch on request

Reed Switch Type (SPST)

Alarm Switch: Form A N.O. Type Bistable Switch

Rating: AC 125V 0.5A / DC 100V 10W /

Max. DC 250V < 40mA



Transmitter Type

Potentiometer I/P

Output Signals: 4~20mA DC,
Load resistance R_L (max)=(V_s-10) x 50Ω (2-wire)

Input Range: 100Ω to 45KΩ (3-wire)

Output Adjustment Range: Zero adjustment 0~15%

Accuracy: ±0.1% F.S (at 23°C)

Linearity: ±0.1% F.S

Supply Voltage: 10~30V DC

Temp. Coefficient: ±0.02% / °C

Operating Temp.: -5~+70 / °C

Operating Humidity: 0~90% RH

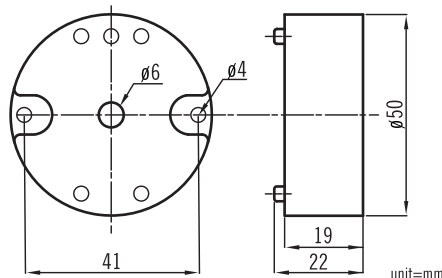
Terminal: DIN Type

Installation: Head and Wall Mounting

Case Material: Nylon 6 resin (Black)

Weight: about 50 grams

Dimensions

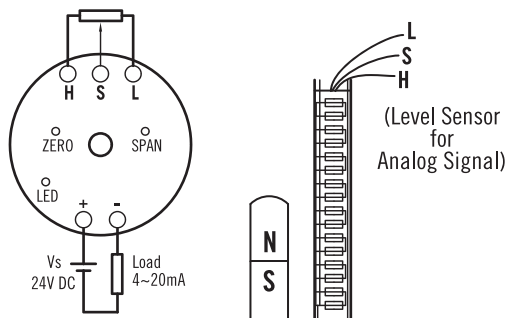


*HART® Communication: Available
Two Wire Transmitter with HART® Protocol
- Galvanic Isolation
- Suitable for application in SIL 2 installations



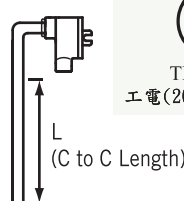
GL-T

Sketch Terminal & Level Indicating Strip



Level Sensor Unit

Model: LTG



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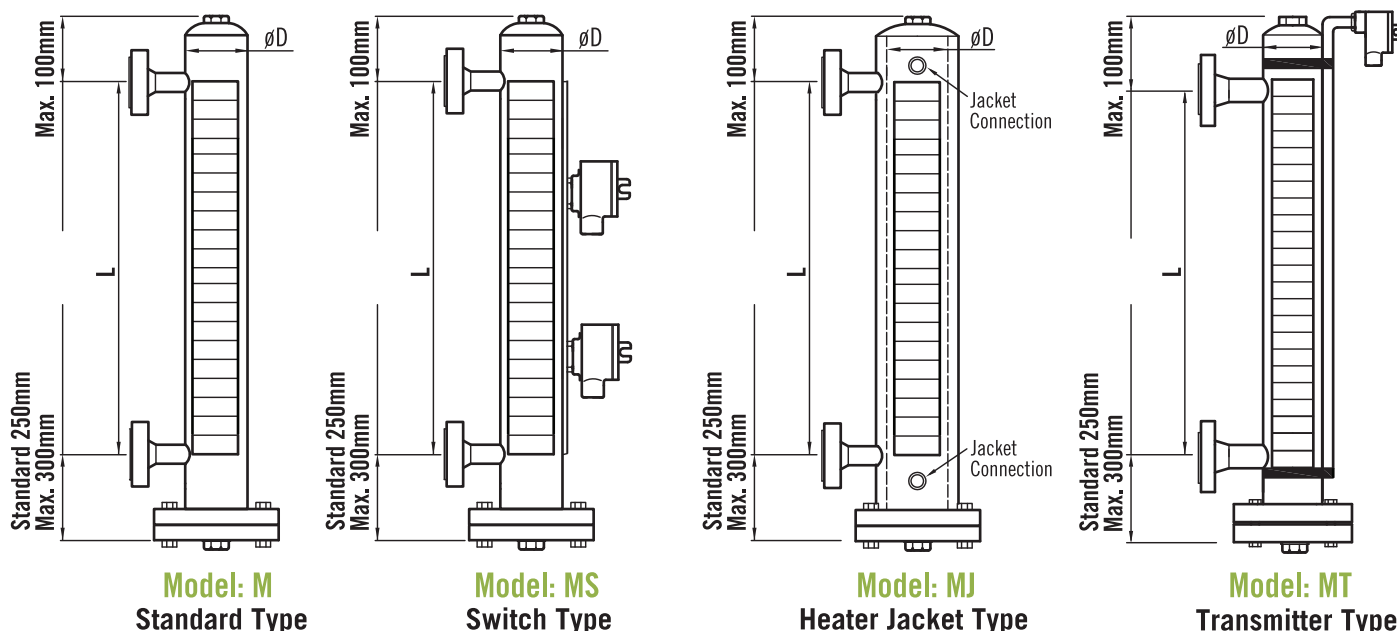
Features

- ISO 9001 and CE certificate
- High immunity to external noise
- LED indication and DC power polarity protection
- High reliability, lasting durability and low cost

Application

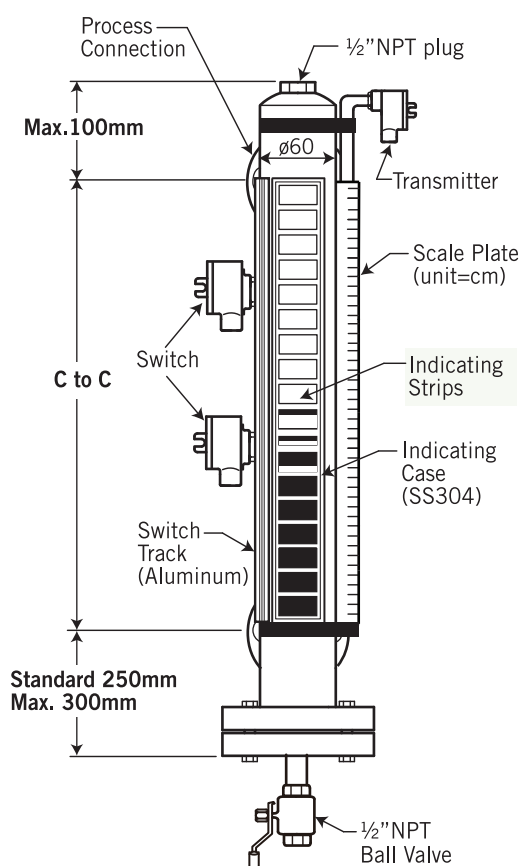
- Position of valve, damper and other devices

M Standard Type—Side Mounting Series (*D=ø50 or ø60mm available*)

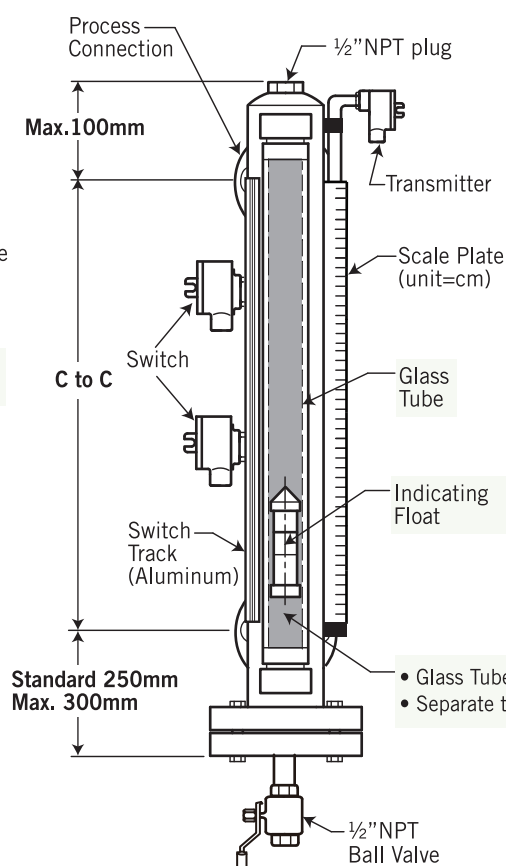


Assembly Parts Drawing

■ Strips Indicating Type ■



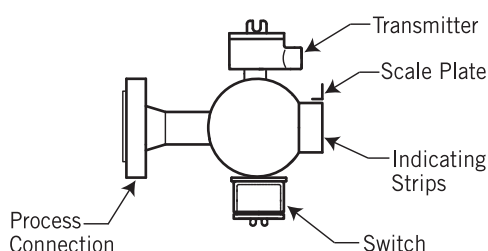
■ Float Indicating Type ■



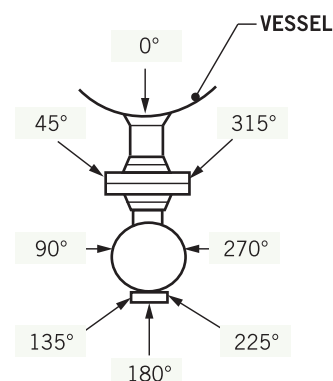
- The indicating float is sealed in the inside of the glass tube, and the inner filled with silicon oil.
- The indicating float is following with the measuring float to rise up or fall down which is based on the principle of magnetic coupling.
- This type has the advantage of a good isolation dust function.
(Ex.: The level gauge installed at the chemical field, the indicating strips will be easily dirty by air dusts or erosion by corrosion fluid to damage. And, the float indicating type can avoid this situation.)

- Glass Tube Filled Silicon Oil.
- Separate to measuring chamber.

Top View



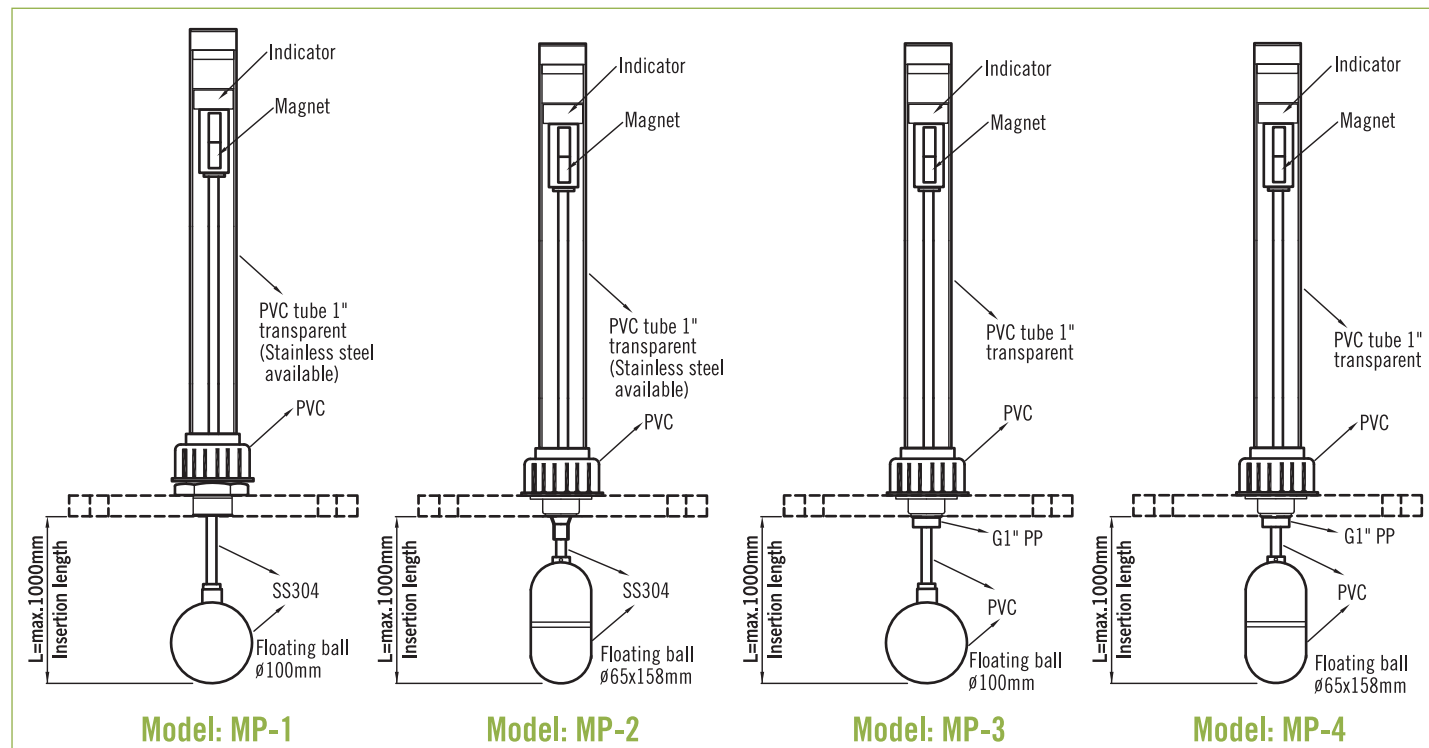
Orientations: Reference for Element (Indicator Strips, Transmitter, Switch)



Ordering Information

M Type	Code	Model														
	M	Standard Type		MS	Switch Type		MJ	Heater Jacket Type								
	MT	Transmitter Type Indicating + 4~20mA					MTH	Indicating + HART (4~20mA)								
		Code	Connection													
		A	½"	B	¾"	C	1"	D	1½"	E	2"	F	3"	G	Option	
		Code	Connection Rating													
			(1) PTM (2) NPTM (3) JIS 10K (4) JIS 20K (5) ANSI 150# (6) ANSI 300# (7) PN16 (8) PN40 (9) Option													
		Code	Material of Wetted Parts													
			(A) SS304 (B) SS316 (C) SS316L (D) PVC (E) PP (F) PE (G) PVDF (H) Option													
		Code	Material of Indicating Case													
		2	SS304		3	Borosilicate Glass (only for indicating float type)										
		Code	Material of Indicating Strips (or Float)													
		A	Plastic (PBT)				C	Brass w/painting								
		F	Aluminum Float (only for indicating float type)													
		Code	Switch Type													
		1	Reed Switch		2	Micro Switch		3	Option		0	Without Switch				
		Code	Switch Point													
			(A) 1 (B) 2 (C) 3 (D) 4 (O) Without													
		Code	Transmitter Type													
		1A	4~20mA Transmitter, Resolution Accuracy: ±12mm (standard)													
		1B	4~20mA Transmitter, Resolution Accuracy: ±6mm													
		2	Without													
		Code	Scale Plate													
		A	Yes		B	Without										
		Code	Protection Class for Switch or Transmitter Type													
		0	Without													
		1	Weather Proof, IP66 (Model: MS-1)													
		2	Explosion Proof (Ex. Certificate on Housing only)													
		2M	Explosion Proof: Ex d IIB + H ₂ T6 Gb (Model: MWS-Type Examination Certificate of Qualification)													
		2T	Explosion Proof: Ex d IIB + H ₂ T6 Gb (Model: LTG-Type Examination Certificate of Qualification)													
		Code	Specific Gravity													
			Please directly fill out the Sp.Gr. in the of liquid order code.													
		Code	Center to Center Length (L)													
			Please directly fill out the length you required.													
		Code	LCD Display (for MT and MTH)													
		D	With (D-1000, Ex. Type)													
		N	Without													
		Code	Setting Point & Switch Acting Functions													
			Please fill in the requested length and float rised ↑ON or fall down ↓ON. ℓ 1=___mm□ON ℓ 2=___mm□ON ℓ 3=___mm□ON ℓ 4=___mm□ON													
M Type																Complete Ordering Code

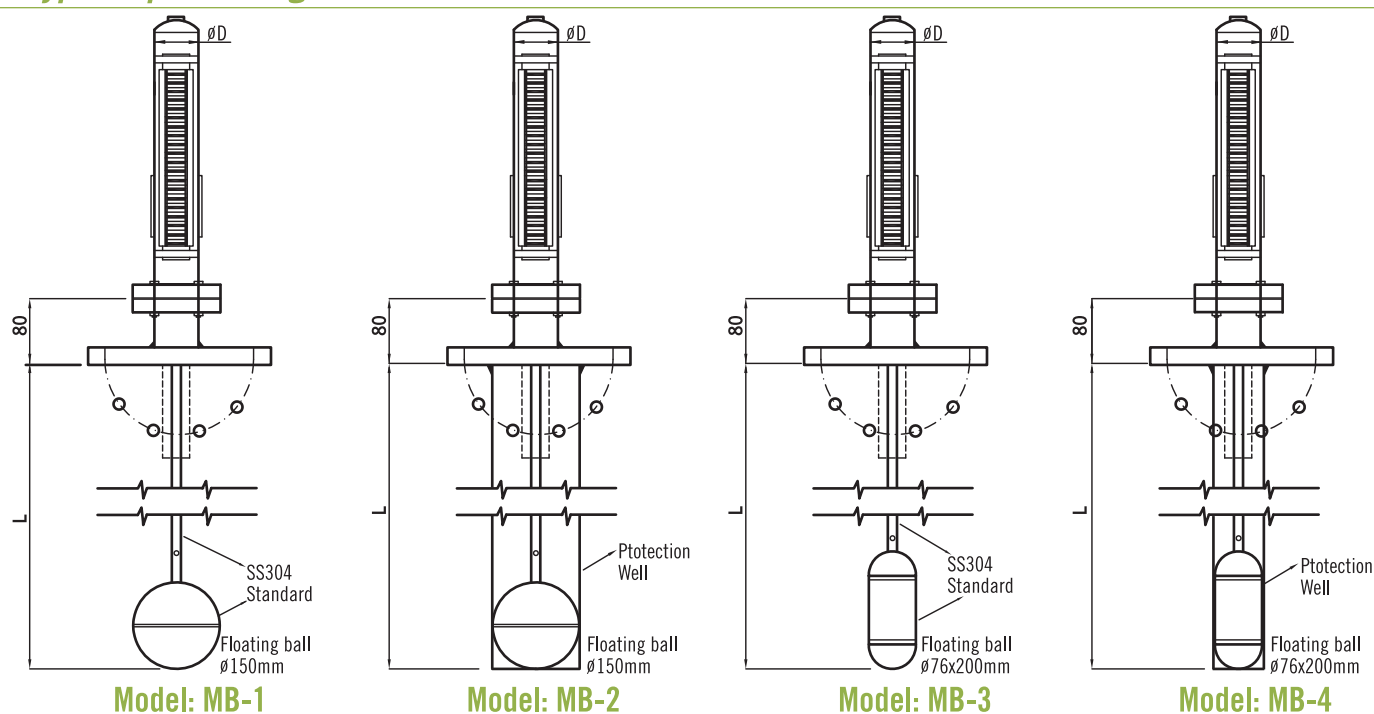
MP Type—Top Mounting Transparent Series



Ordering Information

MP Type	Code	Model
		MP-1 MP-2 MP-3 MP-4
		Code Connection
	A	3" B 4" C Option
		Code Connection Rating
		(1) PTM (2) NPTM (3) JIS 10K (4) ANSI 150# (5) PN16
		Code Material of Wetted Parts
	A	SS304 B SS316 C SS316L D PVC E PP F PE G PVDF H Option
		Code Material of Indicating Case
	1	PVC Tube Transparent 2 Blind SS304 3 Blind SS316
		Code Switch Type
	1	Reed Switch 2 Micro Switch 3 Option 0 Without Switch
		Code Switch Point
		(A) 1 (B) 2 (C) 3 (D) 4 (O) Without
		Code Transmitter Type
	1A	4~20mA Transmitter, Resolution Accuracy: ± 12 mm (standard)
	1B	4~20mA Transmitter, Resolution Accuracy: ± 6 mm
	2	Without
		Code Scale Plate
	A	Yes B Without
		Code Switch or Transmitter Housing
		(0) Without (1) Weather Proof, IP66 (2) Explosion Proof
		Code Specific Gravity
		Please directly fill out the Sp.Gr. in the of liquid order code.
		Code Setting Point & Switch Acting Functions
		Please fill in the requested length and float rised \uparrow ON or fall down \downarrow ON. $\ell 1$ =__mm <input type="checkbox"/> ON $\ell 2$ =__mm <input type="checkbox"/> ON $\ell 3$ =__mm <input type="checkbox"/> ON $\ell 4$ =__mm <input type="checkbox"/> ON
MP Type		Complete Ordering Code

MB Type—Top Mounting Series



*D=ø50 or ø60

Ordering Information

MB Type	Code	Model
		MB-1 MB-2 MB-3 MB-4 MBH (Indicating + HART (4~20mA), no alarm switch available)
	Code	Connection
	A	3" B 4" C Option
	Code	Connection Rating
		(1) JIS10K (2) JIS 20K (3) ANSI 150# (4) ANSI 300# (5) PN16 (6) PN40 (7) Option
	Code	Material of Wetted Parts
	A	SS304 B SS316 C SS316L D PVC E PP F PE G PVDF H Option
	Code	Material of Indicating Case
	2	SS304
	Code	Material of Indicating Strips
	A	Plastic (PBT) C Brass w/painting
	Code	Switch Type
	1	Reed Switch 2 Micro Switch 3 Option O Without Switch
	Code	Switch Point
		(A) 1 (B) 2 (C) 3 (D) 4 (O) Without
	Code	Transmitter Type
	1A	4~20mA Transmitter, Resolution Accuracy: ±12mm (standard)
	1B	4~20mA Transmitter, Resolution Accuracy: ±6mm
	2	Without
	Code	Scale Plate
	A	Yes B Without
	Code	Switch or Transmitter Housing
		(0) Without (1) Weather Proof, IP66 (2) Explosion Proof
	Code	Specific Gravity
		Please directly fill out the Sp.Gr. in the of liquid order code.
	Code	LCD Display (for MBH)
	D	With N Without
	Code	Setting Point & Switch Acting Functions
		Please fill in the requested length and float rised ↑ON or fall down ↓ON. $\ell 1 = \underline{\hspace{1cm}} \text{mm} \square \text{ON}$ $\ell 2 = \underline{\hspace{1cm}} \text{mm} \square \text{ON}$ $\ell 3 = \underline{\hspace{1cm}} \text{mm} \square \text{ON}$ $\ell 4 = \underline{\hspace{1cm}} \text{mm} \square \text{ON}$
MB Type		Complete Ordering Code